

WHAT IS CLAIMED IS:

1. An image processing method for controlling a starting point which produces a black component between vertices showing a plurality of chromatic colors and a vertex showing a black in a reproducible color space of a color output apparatus when a look-up table is prepared to convert an input color signal into a plurality of color components including a black component,

10        wherein the starting point which produces said black component based on the value of the complementary color component corresponding to the chromatic color which is inconspicuous in a graininess of a black recording material in an output image is controlled.

15        2. The image processing method according to claim 1, wherein, in each line linking each vertex showing said plurality of chromatic colors and the vertex showing the black on said color space, the starting point independently producing said black component is controlled.

25        3. The image processing method according to claim 1, wherein, from said black component starting point to the vertex showing said black, the chromatic color component and the complementary color component and the black component are calculated by using a function.

4. An image processing method for preparing a look-up table for an input color signal into an output color signal constituted by a plurality of color components which are used when a color output apparatus  
5 outputs a color image,

wherein the method is intended for setting up a lattice point between a vertex showing the chromatic color and a vertex showing the black in a reproducible color space of said color output apparatus, and

10 an interval between the vertex showing said chromatic color and the vertex showing the black is divided into a plurality of areas different in the combination of a color component used in said color reproduction, and a lattice point is set up according  
15 to a ratio of each area between the vertex showing said chromatic color and the vertex showing the black.

5. An image processing method for preparing a color conversion look-up table for a color image  
20 forming apparatus for forming a color image by using a plurality of recording materials different in density used in a black recording material and an identical system color reproduction,

wherein the starting point which produces a dark  
25 recording material in the interval between the vertices showing a plurality of chromatic colors and the vertex showing the black in the reproducible color space of

the color output device is controlled when the look-up table to convert the input color signal into a plurality of color components including the black component is prepared, and

5           the starting point is controlled, which produces a color component corresponding to a dark recording material based on the value of the color component corresponding to a light recording material concerning said complementary color component which is  
10   indistinguishable in the graininess of said dark recording material concerning the complementary color component corresponding to the chromatic color in an output image.

15           6. The image processing method according to claim 5, wherein the starting point producing said black component is controlled based on the value of the color component corresponding to the dark recording material concerning said complementary color component which is  
20   inconspicuous in the graininess of the black recording material in the output image.

          7. The image processing method according to claim 5, wherein the starting point independently producing  
25   said black component is controlled in respective lines liking respective vertices showing said plurality of chromatic colors and the vertex showing the black.

8. A program for realizing an image processing method for controlling a starting point which produces a black component between vertices showing a plurality of chromatic colors and a vertex showing a black in a reproducible color space of a color output apparatus when a look-up table is prepared to convert an input color signal into a plurality of color components including a black component,

wherein the starting point which produces said black component based on the value of the complementary color component corresponding to the chromatic color which is inconspicuous in a graininess of a black recording material in an output image is controlled.

9. A program for realizing an image processing method for preparing a look-up table for converting an input color signal into an output color signal constituted by a plurality of color components which are used when a color output apparatus outputs a color image,

wherein the program is intended for setting up a lattice point between a vertex showing the chromatic color and a vertex showing a black in a reproducible color space of said color output apparatus, and

an interval between the vertex showing said chromatic color and the vertex showing the black is divided into a plurality of areas different in the

combination of the color component used in said color reproduction, and a lattice point is set up according to a ratio of each area between the vertex showing said chromatic color and the vertex showing the black.

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10. A recording medium for recording a program for preparing a color conversion look-up table for a color image forming apparatus for forming a color image by using a plurality of recording materials different in density used in a black recording material and an identical system color reproduction, said program comprising the steps of:

controlling the starting point which produces a dark recording material between vertices showing a plurality of chromatic colors and the vertex showing a black in a reproducible color space of a color output device when the look-up table converting an input color signal into a plurality of color components including a black component is prepared, and

controlling the starting point which produces a color component corresponding to a dark recording material based on the value of said color component corresponding to a light recording material concerning said complementary color component which is indistinguishable in the graininess of said dark recording material concerning the complementary color component corresponding to the chromatic color in an output image.